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ABSTRACT

This paper proposes a way to professionalize teaching based on internal change and six knowledge bases of professional teaching. Key features of this approach are: (1) it proposes professionalization from within through active involvement from schools and districts; (2) it includes the knowledge base in generic pedagogy (composed of communication of expectations, class climate, personal relationship building, clarity, principles of learning, models of teaching, curriculum planning and lesson design, attention, and momentum) as a vital ingredient; (3) it proposes a new way of thinking about the nature of professional knowledge as built around areas of performance, repertoire, and matching (the ability to draw from a repertoire the best response to match a given situation); (4) it outlines a campaign for changing public attitudes that is necessary for generating the national support required to fund professionalization; (5) it takes a systems approach to professionalization; and (6) it proposes a functional model for integrating the elements of this system and for beginning right away. The proposal covers the following topics: why professionalization is important, obstacles, changes in teacher education, effecting change, and creating a national professional organization. Appendixes contain information on six knowledge bases of professional teaching, teacher beliefs, and teacher competencies in the six knowledge bases. (Contains 38 references.) (JB)

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Bonfires and Magic Bullets

Making Teaching a True Profession

➠ *the step without which other reforms will neither take nor endure*

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INTRODUCTION

There are several features that make the plan in this paper different from others in the current vital effort to professionalize teaching.

First, whereas other projects work toward professionalization through external standards and boards, this paper emphasizes professionalization from within. It shows schools and districts where they can play a role and act now to advance professionalization.

Second, it is the only proposal that includes the knowledge base on generic pedagogy as a vital ingredient and provides a map of what it is.

Third, it proposes a new way of thinking about the nature of professional knowledge itself, and argues that this new view, while not at all flashy (epistemology is rarely flashy) is essential to the success of the professionalization movement.

Fourth, it outlines a campaign for changing public attitudes that is necessary for generating the national support required to fund professionalization.

Fifth, it takes a systems approach to professionalization that includes public schools, career ladders, universities, external boards, state departments of education, and public opinion.

Sixth, it proposes a functional model for integrating the elements of this system and for beginning now.

Jon Saphier

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1 WHY WE NEED TO MAKE TEACHING A TRUE PROFESSION

None of our best ideas about improving instruction or restructuring schools will work unless we improve the capacity of teachers through knowledge and make teaching a true profession. All our efforts must focus on that, or nothing else will matter—all other claims notwithstanding—claims like the following:

"Unless we have more demanding standards...unless we have learner centered schools...unless we have human environments where students can be really known by their teachers...unless we organize schools around outcomes based programs...unless we involve teachers and parents in meaningful school governance...unless we teach all children the thinking curriculum... "

All those claims are TRUE; but they are less important than increasing the capacity of teachers and making teaching a profession. A profession has certain recognizable attributes.

1. Professions have an acknowledged knowledge base the nature of which is
   - Areas of Performance
   - Repertoire
   - Matching

All true professional knowledge is so constituted. (We will explain the attributes in some detail on the following pages.)

2. Professions have rigorous training and certification of members.
3. Professions have a workplace culture of high consulting and collaboration.[1]
4. Professions have systematic enculturation of new members.
5. Professions have required and continuous learning regularly built into the work cycle.
6. Professions have high public accountability.
7. Professions have internal maintenance of high standards of practice.
8. Professions have members who are responsible for client results.
9. Professions have members who make autonomous decisions guided by a canon of ethics.

None of these characteristics can be claimed for teaching now. In this paper we

[1] This requires new arrangements of space, scheduling, grouping, and also access to one another that are radically different from what most schools provide today.

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will address all nine and how to get them, with emphasis on the first two.

We have the knowledge, we have the talent, and we have the resources to develop in our teachers the capacity, based on extensive professional knowledge, to multiply the productivity of our schools. Yet this knowledge lies fallow because of our blindness to the fundamental and overriding issue: teachers' capacity and the unconscionable gap between what it is and what it needs to be. Without closing that gap, none of the "should's,"—none of the numerous "we musts"—can ever be realized beyond isolated lab settings.

We can and must remedy this situation. The goal of this paper is to generate support for launching a national effort for training and certifying high performing professional teachers by 2010 who can educate all our children to 21st Century standards.

Teaching is intellectually complex, difficult and demanding work, at least as complicated as architecture or engineering. Not recognizing this, year after year we set eager, dedicated people to work without the equipment for the job and somehow expect them to learn it on their own. The fact is our teachers are neither prepared to function at the high standards of a true profession nor do they inhabit workplaces structured so they can acquire that professional knowledge. And it will take a high level of professional knowledge to do what we now expect of our schools. Even worse, there is confusion and denial that there even *is* such a thing as a professional knowledge base for teaching. That position is wrong. It is dragging us down like an anchor. This is a serious situation, and any reform effort that does not deal with it first and deal with it head on will fail.

One of the most important aims of this paper is to describe a comprehensive map of professional teaching knowledge and make a convincing case that 1) it is far broader and more sophisticated than our institutions or our public sees and 2) if our teachers received systematic and continuous education in that knowledge, our schools would be vastly more productive. Others have made important contributions to answering the question, "What should teachers know and be able to do?" (Dill 89; Kelly 90; Miller and Darling-Hammond 92) This paper will consolidate some of those answers, add two new ones, and present a new view of the most denied and misinterpreted area of all—generic pedagogy itself.

Our long-term proposal for making teaching a full profession will describe steps to:

- identify and organize the knowledge base of the profession systematically
- convince the public that schools really matter and that good teaching produces results for workforce quality and citizenship
- convince the public that teaching is intellectually complex, difficult and demanding work
- give practitioners the lead role in teacher education
- bring universities into a new and different relation to school districts and to teacher certification

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- develop rigorous performance assessments in key areas of the knowledge base for licensure, certification, and recertification
- get states to radically upgrade certification requirements
- create a national professional guild

Our short term proposal will describe an innovative but achievable model for training high performing teachers right now with a novel concentration of resources already available.

The next section of the paper lays out the case for the singular urgency of building a knowledge-based profession and accepting a new view of professional knowledge. Then in section II we will analyze the obstacles that have been blocking progress toward professionalism. In section III we will describe steps we can take to remove these obstacles. Finally in section IV we will propose a new model for professional training and licensure we can begin right away that in itself acts as a lever for institutional change in the way schools work.

Time for the Fundamentals

It has become conventional wisdom that there are no magic bullets, and that school improvement proceeds slowly, ... that we win by inches; that we need patience and perseverance; that we have to stay the course and work steadily for the deep cultural changes in the workplace and improvements in instruction that will move us forward. But as we struggle on with "courageous patience," as Ted Sizer says, time grows short for a generation of children.

In our group at Research for Better Teaching we love the thinking skills movement; we love Cognitive Coaching; we love working with people to create school-based decision-making councils. In fact, we have invested significant amounts of time and effort working on all three and other similar initiatives. But we have come to see that none of them can rise above the dam and liberate the flood of energy and commitment across the country that we need because none of them deals with the knowledge and skill of practitioners.

Authentic assessment is a good example. No single change in practice has so much potential for upgrading the clarity and focus of instruction. No single movement has such power as a staff development vehicle. Authentic assessment, however, calls for a great deal of thoughtful planning, clear and high level thinking, and collaborative designing by teachers who teach the same content. Neither the structure of school as a workplace nor the prior preparation of teachers as curriculum thinkers prepares them for doing what authentic assessment requires. This movement, one of the most powerful of our century, may go the way of other "reforms" because we do not have sufficient numbers of teachers prepared to deal with its complexity. Nor do we have a professional workplace environment that supports the consulting and collaboration required to carry out any complex change—an environment all other professions (e.g., architecture, dentistry, law, medicine, engineering) have built into the workplace as a matter of course.

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We truly have lying around us the knowledge to educate all children well. We had a great deal of that knowledge in the 30's—and the Eight Year Study (Smith and Tyler 42) showed that that knowledge put into practice yielded superior results[2]. Sadly, nothing changed then; and now that knowledge is again filling our journals and our conferences. Portfolios; site-based decision-making; responsive curriculum; team teaching; block scheduling; common planning time; active learning: literally all the reformers and restructurers and all the journals for teachers, administrators, and school board members are once again popularizing the virtues of these innovations. Yet again they are not entering our common practice. Why is this so?

[2] Students in progressive schools incorporating most of the innovations in the wordsplash above outperformed graduates of control schools on an incredible array of outcomes from college grades to community participation and career satisfaction in later life.

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Again and again each of the innovations above has been demonstrated to be effective when carried out thoughtfully by skilled and committed people who are given adequate support. Yet most of these innovations do not endure and do not spread.

Unless we go after the fundamentals, this story will go on repeating itself. New labels, new grants, and new projects will continue to confirm the proven; but practices across the nation will not change. Restructured schools with new governance councils will continue to recreate the past. Charter Schools will put multiple innovations to work in the same place and see their example unreplicated, as have the lab schools of the past. *It will continue to decline because the people working with children will not know any more than they did before, or be any more skilled or supported in their personal and professional growth than before.*

Reports and advocacy groups from government and industry concur on the new needs in the global economy for all our students to learn thinking, problem solving, communication skills, group skills, and skills for learning how to learn. Given these new needs, our schools will not only fail to meet them, but our country will continue to slide farther behind the rest of the world in educational and commercial productivity unless we go after the fundamentals.

What is fundamental is this: of all the things that are important to having good schools, nothing is as important as teachers and what they know, believe, and can do. Therefore the most important thing we can do for school improvement is to:

a) systematically collect, organize, and acknowledge from the rooftops that we have a knowledge base on teaching, and that its nature is fundamentally different from the "effectiveness" paradigm (explanation to come)

b) recruit committed new people and learn to believe in the people we have

c) give new and experienced teachers education in professional knowledge that is not only comprehensive, continuous, and challenging, but also *required* and assessed by performance for licensure and periodic recertification

d) create conditions of work that support constant professional growth and organizational effectiveness.

In short, what we need to do is focus our resources on our people and the conditions of their work and build these conditions into the structure of a true profession.

The innovations and practices splashed above won't matter and, in fact, won't even *happen* if we don't have *large numbers of high performing professional teachers;* and when we **do** have sufficient numbers of high performing professional teachers working together, many of the innovations will begin to fall into place almost automatically.

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There is at present an unconscionable gap between what our teachers know and what they could and should know in order to actualize the innovations above and in order to meet the learning needs of all children. This is especially true in inner cities where schools perennially see unprepared and unsupported young people thrown into difficult classrooms to sink or swim with scant or no support. This knowledge gap will not be closed by a patchwork of more in-service, or by creating alternative certification routes to bring more people laterally into teaching from other walks of life. The need for good teaching is of national interest on a par with our urgent need for a national health care system. Good teaching at the standard we need nationwide can only be generated from within the expectations, structures, and accountability of a true profession.

None of this is an indictment of the dedicated but struggling corps of people we have in teaching today. It is amazing they accomplish what they do given the preparation they receive and the workplace culture in which they function. Although thousands of individuals who teach act in a highly professional manner, teaching is not now a profession. The first step in making it one is recognizing the nature of professional knowledge.

The Nature of Professional Knowledge

We operate from the wrong model of what knowledge on teaching is. This wrong model has enormous consequences for the structure of schools and for teacher learning—consequences which inevitably curb reflection and invention and result in widespread mediocrity. The erroneous image of teaching in this model starts a chain of actions which leads to treating teachers as low level functionaries whose job is to "implement" curriculum and decisions from above, not to think. This model is the "effectiveness" paradigm which assumes there is a list of "effective" behaviors which can be identified, learned, and practiced to proficiency. In any true profession, however, the nature of professional knowledge is quite different. It is built around three key concepts: 1) areas of performance; 2) repertoire; and 3) matching.

Areas of Performance

A lawyer, for example, has certain zones of work or areas in which he/she is asked to operate: writing briefs; taking depositions; filing motions; preparing courtroom strategies. The architect's list includes interviewing clients for needs; drafting and designing; choosing and costing materials and accessories; negotiating the bureaucracy of the local building authorities; supervising builders. (Both these lists are far longer than sketched here.)

Repertoire

For each of these areas of performance there is *no one best way of handling it*—no single best style for writing a brief; no single best courtroom strategy; no single best home design; but there exists a *repertoire* of ways to do each task which is acknowledged by the profession.

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Matching

In each case, the professional draws from his/her repertoire the response that best suits or matches the situation. The courtroom strategy is matched to the nature of the case and what is known about the personality of the judge. The design of the house is matched to the contour of the land, to the needs and desires of the owner. The architect is able to bring different house designs, different models and approaches to each individual case.

These three concepts are defining attributes of professional knowledge in any field. Professionals are decision-makers; they make decisions from an acquired and ever expanding repertoire. The responses they choose are the ones that are most appropriate to a given situation.

Similarly, in teaching there are many areas of performance. Some pertain to classroom management and require subtle perceptions and quick decisions. Others are highly cognitive in nature and require insight into students' thinking and students' assumptions; they require a large repertoire of sophisticated and resourceful teacher responses. Others are psychological in nature requiring knowledge such as how to convey high positive expectations, and how to convey regard and respect through interpersonal interactions. Still others pertain to planning and designing learning experiences that are meaningful to students and that are orchestrated for continuity, sequence, integration, and the stimulation of connections and higher level thinking. The sophistication of this knowledge, its wide range and depth, goes beyond that of a craft. Craftspeople apply skilled technical knowledge in prescribed situations. The skills may be finely honed, but the range of decisions called for in a craft is not akin to those of a profession. Nor is professional knowledge the same as that of skilled employees in a bureaucratic or factory-oriented work environment where skillfulness means carrying out prescribed procedures with speed, efficiency, and low error rates.

Knowledge Base on Pedagogy

It is a paradox that the knowledge base on generic pedagogy is enormous, complex, rich, subtle, and vital to successful teaching—and yet it is barely present in teacher education. In fact, its very existence is frequently denied.

The knowledge base on generic pedagogy is quite clear and can be understood in terms of categories or *areas of performance*, each of which is important in its own right for successful teaching and learning. It is essential that all professional teachers show high levels of competence in these areas if we are to educate all our children to 21st Century standards. Each area is important and contains repertoires of very specific behaviors and patterns of thought that can be learned, practiced, and applied. When added together they comprise the tools of a highly complex knowledge base that gets applied through analysis, problem solving, and the capacity to draw from one's repertoire a response that is situation-appropriate. We have grouped these areas of performance into eighteen categories which have been validated empirically (Saphier 79) and though by no means sacred, are a convenient set for holding the range and complexity of interactive

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teaching. Below are some of these areas of performance.

Communication of Expectations

Successful teachers can communicate credibly to each and every one of their students that they, the students, are capable of producing high quality work. Teachers accomplish these outcomes through specific behaviors in nine arenas of classroom life. We know what the nine arenas are and we know the repertoire of behavior in each arena which will give students confidence and support them in exerting effort.

These behaviors stem from genuine belief in the capacity of almost all students to achieve at a high level and cannot be faked. The beliefs, however, can be developed through decades-old training experiences that bring participants face to face with their own contrary beliefs and their own conclusions about their own ability (Howard 92). But a change in belief is not enough. One must know how to *communicate* these beliefs in specific ways through the daily business of classroom life.

We know the behaviors that accomplish such communication. We can name them, show video tapes of them in action, and teach them to practitioners who don't use them. We can observe for them and give feedback on a teacher's displayed repertoire and provide coaching on new ones a teacher is seeking to add. We can help people develop cognitive capacity so they increase the appropriateness of their choices from this repertoire to individual students and situations (the "match").

The comments in the paragraph above about specificity, training, supervision, coaching, and the development of teachers' cognitive capacity also apply to the repertoires of behaviors on the next two pages.

Class Climate

Successful teachers build a climate of mutual support and trust among students, make the class a safe place to take intellectual risks, and find ways to give students choices and a sense of ownership of the "way things go here." There are at least 15 arenas for dealing explicitly with these aspects of climate. We know what they are and we know a great deal about what is in the repertoire for each. (Saphier and Gower, in press)

Personal Relationship Building

Successful teachers build relations of regard and respect with students through eight types of genuine behavior. (Saphier and Gower 87) Students thus believe their teacher knows them and authentically cares about their welfare and their learning.

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Clarity

Successful teachers explain concepts to students well and have at their disposal a large array of techniques for making concepts clear and vivid. They know how to help students become cognitively active in anchoring ideas with their own prior knowledge and the big picture. They can build explicit bridges between cues and the intention of the cues, between directions and how the students are to use the directions, between open ended questions and the focus of the question. They use questions well and know how to get inside students' thinking and identify and deal with confusions and misconceptions. There exists a repertoire of strategies to do all these things, and we know what is in it.

Principles of Learning

Successful teachers have technical knowledge of the 24 principles of learning (Saphier and Gower , op. cit.) like Goal Setting; Active Participation; Meaning. They can apply them appropriately to lesson design before instruction and to spontaneous shifts during instruction.

Models of Teaching

Successful teachers draw appropriately from the repertoire of over two dozen models of teaching (Joyce and Weil 92) i.e., patterns of lesson design and activity structures to stretch students learning style and teach them thinking and organization skills. Thus they can orchestrate appropriately across discovery, direct instruction, and inquiry approaches to learning.

Curriculum Planning and Lesson Design

Successful teachers can bring each of the five ways of thinking about objectives to lesson design—coverage, activity, involvement, mastery, and teaching for thinking skills. (Saphier and Gower, op. cit.) They can thus weave the teaching of thinking and problem solving and productive habits of mind into the teaching of knowledge and skills of the academic disciplines.

Professionals in architecture and engineering are always designing custom products, built from their knowledge of design, their repertoire of skills and routines, and the needs of the current situation. Similarly, teachers design custom lessons every night by asking what the students need, by drawing on resources they know about, and by using the knowledge base about lesson and unit design itself.

Teachers design lessons, units, and whole curricula for their students. Even in districts with well developed central office curriculum departments, classroom teachers will tell you that they create their own lesson plans each day for most of what they teach, and that is as it should be. There exists highly developed knowledge about not only the curriculum development process (Glatthorn 89), but also about effective design for continuity, sequence, and integration (Tyler 49). This knowledge needs to be a functioning part of a teacher's repertoire if we are to claim we have a professional knowledge base underlying our practice.

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Attention

Successful teachers draw appropriately from a repertoire of over 50 moves to engage students attention, keep it, and regain it if it wanders. (Saphier and Gower, op. cit.)

Momentum

Successful teachers avoid downtime, delay, distraction, confusion over directions, and conflict over materials for students by employing a repertoire of strategies based on anticipation and deft handling of simultaneous events. We know both the challenges and the repertoire of proactive behaviors for accomplishing this kind of smooth classroom management.

There are nine more areas like those above (see Saphier and Gower, op. cit.) which are significant variables in the total (and complex) picture of successful teaching. And each area consists of known repertoires of behaviors for accomplishing the job of that area.

This is generic teaching—generic pedagogical knowledge—we are talking about, independent of subject, grade level, or age of student. Each of these areas has a substantial and solid research base behind it; each is known to be important for student learning. *Together* they form the knowledge base on generic pedagogy. Any professional knowledge base is a complex assembly of knowledge and skills in a number of areas of performance. So it is with teaching.

Nowhere in the country, however, is there a school or district where one can find teachers who have the benefit of organized professional development opportunities in these areas. Nowhere is there a district where teachers must demonstrate competence in them. At the present time, though good beginnings have been made, nowhere in the United States—not at one single college, university, or institute—can one get systematic and comprehensive education in these vital areas of knowledge. It is time now to bring this vital knowledge into the mainstream of teacher education.

How the "Effectiveness" Paradigm has been an Obstacle to Professionalism

I have been making the case that the nature of professional knowledge in any field is *repertoires* of behaviors and skills, from which the professional selects judiciously in light of the current situation. Professionals are decision-makers who draw on their fund of techniques with the wisdom of practice (read as professional judgment) augmented by the fine tuning of their accumulated experience. Understood in this way, we come to see that the knowledge base on teaching is rich, deep, varied, and as intellectually challenging and complex as any branch of engineering.

There is increasing recognition that the "effectiveness" model of the knowledge base is inadequate for representing its true nature and needs to be replaced by the more modern Repertoire-Matching model (Saphier 79; Shulman 87; Berliner 91). The "effectiveness" model assumes there are "effective" teacher behaviors

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which can be identified, labeled, studied. Then one can teach them to teachers. If we all learn these "effective" behaviors and practice them, then we will do good teaching. This paradigm about the nature of teaching knowledge leads to the creation of lists, and belief that teacher evaluation can be performed through checklists about the presence and frequency of certain behaviors. It also diminishes the sophistication of what it might take to teach and reduces skillfulness to the ability of a person to learn and practice a list of behaviors; it embeds the assumption that one could be expected to reach proficiency quickly and then maintain it through supervision for good work habits such as punctuality and thoroughness, not supervision for thinking, problem solving, and continual growth. And this, of course, is what we have operating in most schools in the country as a consequence of the "effectiveness" paradigm.

In the "repertoire and matching" paradigm of the knowledge base, discrete teaching behaviors (like use of praise) are neither inherently effective nor ineffective. Their effectiveness is context dependent. Individual teaching behaviors are part of known repertoires which can be labelled according to their function (e.g., Clarity Behaviors for explaining concepts and skills; Momentum behaviors for avoiding downtime or delay in classroom management; Relationship Building Behaviors for building regard and respect between students and teachers; Attention behaviors for sustaining engagement.) Any behavior from the repertoires can be appropriate (or inappropriate) given the match to the student, the situation, or the curriculum. Matching—picking appropriately from one's repertoire —is the nature of good teaching as it is the nature of mature practice in any true profession. Such a view of the knowledge base on teaching requires teachers to be constantly increasing their repertoires ("...like adding keys to a ring, so I can open more doors for children."). Thus constant learning about teaching becomes a career-long requirement as in other professions.

I am arguing that the "Repertoire and Matching" model of the knowledge base on teaching must be the foundation of teacher education over the next decade[3]; and that teacher education must meet standards far in excess of present ones. I am further arguing that without this shift in our concept of professional knowledge, we will fail again, as we have for decades, to institutionalize the innovations we continue to invent and prove effective in small laboratory settings. There are several reasons behind this claim. First of all the Repertoire and Matching model is the only one consistent with the nature of professional knowledge, and the only model that respects and can therefore develop a culture of high level thinking and problem solving among teachers themselves. This is precisely the culture necessary for high performing organizations in any field (Senge 90).

The second reason is that the model is inclusive and comprehensive, thus making available to all teachers for study the full range of instructional techniques

[3] Repertoire and Matching applies equally to methods for teaching particular disciplines. In the teaching of reading, for example, Whole Language, Linguistics, and Phonics are all valid approaches whose theory, rationale, and techniques should be part of every primary grade teacher's repertoire. When to use which method, how much, and with which students are the matching choices of professional decision making .

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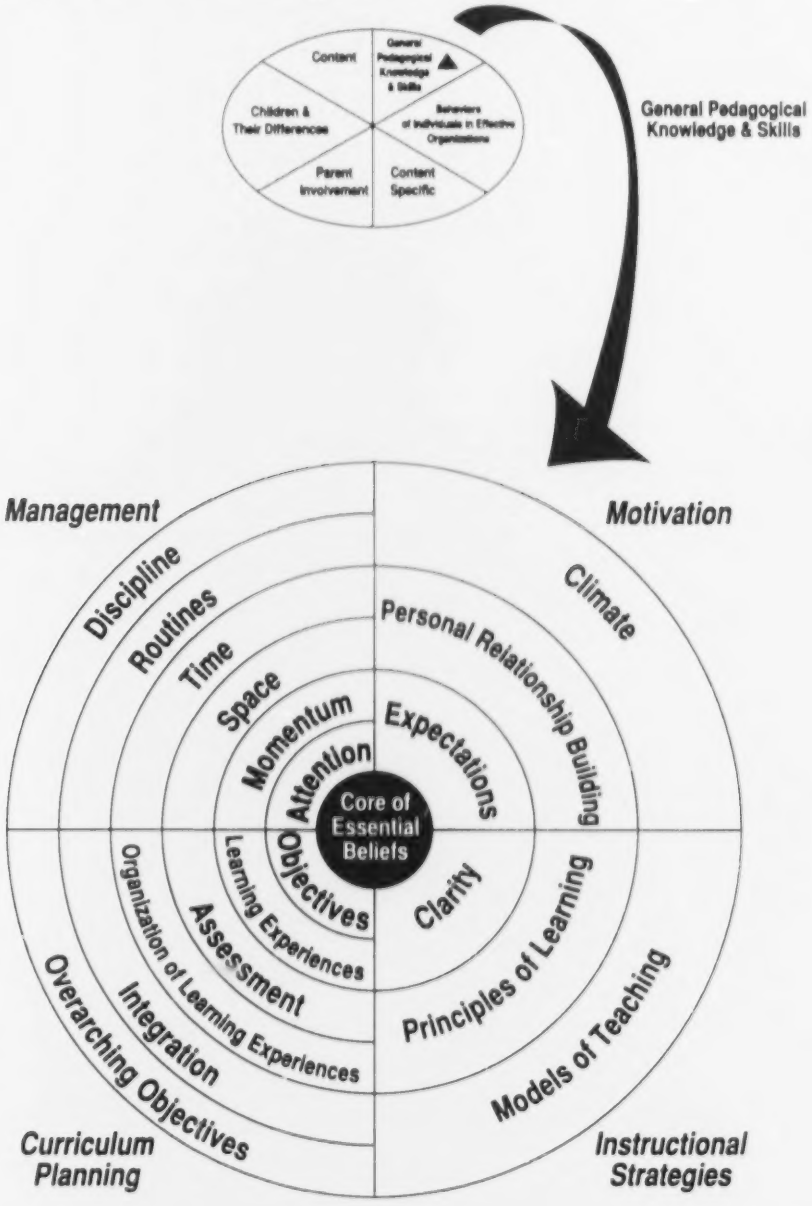
developed by all researchers and practitioners in past decades. It is **a model of the knowledge base**, an epistemological framework with clear roots in epistemological theory (Polanyi 66), not a model for teaching in a particular way. Furthermore it accommodates the need to look in different ways at different levels of the reality of "practice" in order to comprehend that practice.

The following schematic illustrates the areas of functioning in which all professional teachers operate, and for which large and complex repertoires of specific skills exist. It groups them according to four functions.



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The next graphic displays the same eighteen areas of performance but groups them according to the size of the units they contain and the level of inference it would take for an observer to see these units (see Saphier and Gower op. cit., pp. 6-8). The repertoires for the areas of performance in the bottom two layers of the triangle consist of "moves," that is, small discrete observable behaviors like wait time, or questions, or gestures, or use of praise. The middle two bands of the triangle are areas of performance where the units of knowledge are large patterns or assemblies of moves. A Model of Teaching (Joyce and Weil 92) is such a unit of knowledge; the rhythm of time in a lesson created by the deliberate orchestration of time chunks is such a unit of knowledge. The top part of the triangle consists of areas of performance where the teacher's knowledge is about abstractions and design features.

Professional knowledge in any field has three levels of abstraction like this—knowledge of moves, knowledge of patterns, and knowledge of abstractions.

These diagrams are two different ways to represent the knowledge base on pedagogy. Pedagogy is only one part of professional knowledge for teachers, but it is a make or break area, and the one most neglected in teacher preparation. The diagrams are major maps for organizing what we know and assimilating pedagogical knowledge and technique yet to be invented. Each consists of open-ended repertoires to which new additions and refinements are added each year by creative practitioners. In this way they are graphic organizers that resemble the periodic table of elements one learns to use in chemistry courses which, when initially created, identified relationships of natural elements already known and had spaces for elements yet to be discovered.

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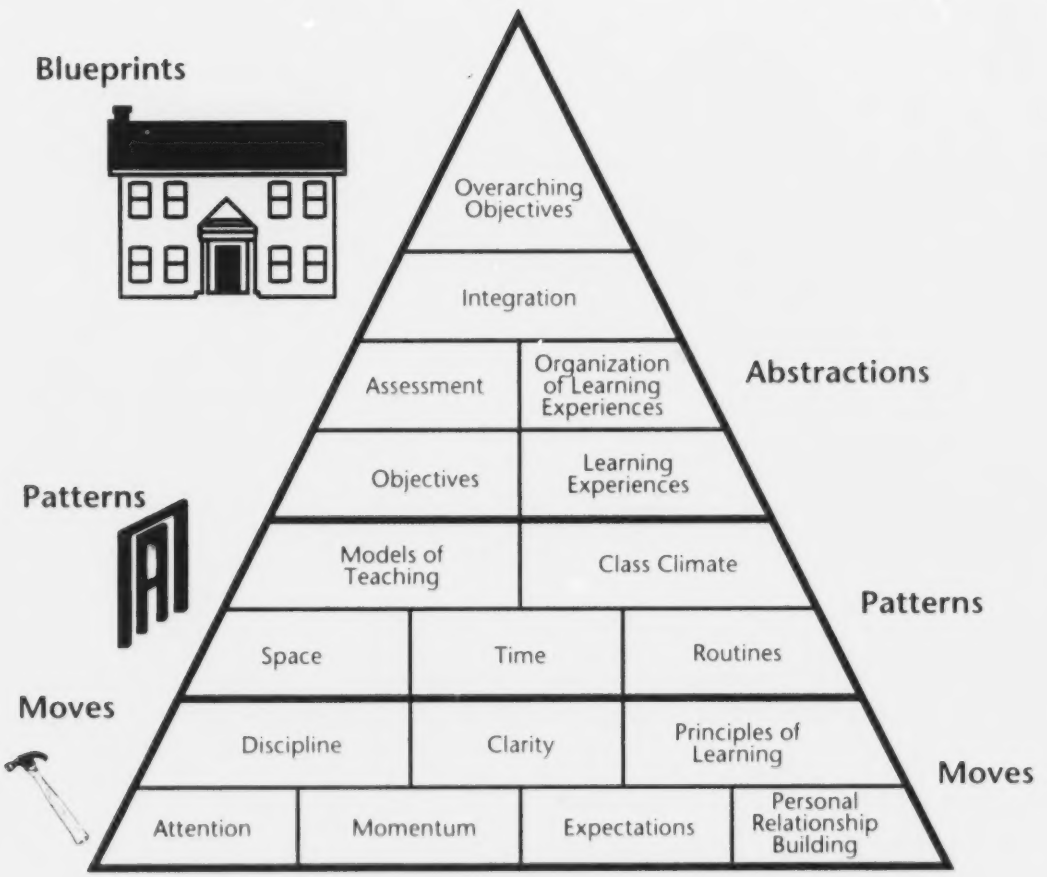
MAP OF PEDAGOGICAL KNOWLEDGE



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Generic knowledge of pedagogy is the secret, unknown sibling of other kinds of knowledge that are recognized as essential for successful teaching and learning. Among these others are content specific pedagogy and deep knowledge of the concepts one is teaching. These two types of knowledge often show up in literature on teacher education. They should show up. They are, indeed, essential; but no more essential and not sufficient in themselves to create successful teaching and learning. *All* of this knowledge is needed *together, at once* for teaching and learning to proceed optimally—knowledge of content, knowledge of content specific pedagogy, and knowledge of pedagogy and learning itself.

We intend the construct of teacher knowledge we have developed here to be respectful because it recognizes explicitly that the knowledge base has been created by teachers as well as researchers and that teachers are decision-makers who must choose appropriately from their repertoires to match given students and situations; and that only the teacher on site has enough background and contextual information to make that decision for individual children. By the same token teachers must be active thinkers and problem solvers, never at rest, always, in a sense, researchers themselves. The act of choosing and matching teaching behaviors to students, situations, and curricula presupposes a level of knowledge, creativity, problem solving, and decision-making that both credits and demands hard work and continual development of teachers—the very same capacity we want to credit and call forth from all students. Teaching viewed from this angle causes us to reexamine the practice of supervision and any other practice that influences the culture of openness and risk-taking in a school's culture. We will return in a later section to these topics. Suffice it to say now that if we do not treat teachers as thinkers, we can never hope to see them teach children to think.

We have needed a framework to reach out and collect all the knowledge about teaching that exists and provide for inclusion and assimilation of all that is to come. The open- endedness of the framework above (or any other we may adopt) is essential because not only is it a truer representation of the nature of professional knowledge, but it is both challenging and respectful to teachers—and those are necessary conditions for creating growth. It is challenging because it carries the assumption that no one knows it all. No single teacher, no matter how experienced or capable, knows all the Models of Teaching (Joyce and Weil 92) or all the ways to explain fractions, or all the ways to reach difficult kids. There is always more to learn, always a new approach to add to one's repertoire. Thus, it is incumbent on all teachers to be constantly adding to their repertoires so they can reach more students.

Requiring Professional Learning

It is not an option in professions such as medicine and law for practitioners to learn or not learn the basic areas of knowledge in their business. It cannot be left to personal taste and matters of style, as it is in teaching, which tools and skills come into a professional's repertoire. It cannot be left to random, accidental, or chance learning opportunities what teachers come to know and

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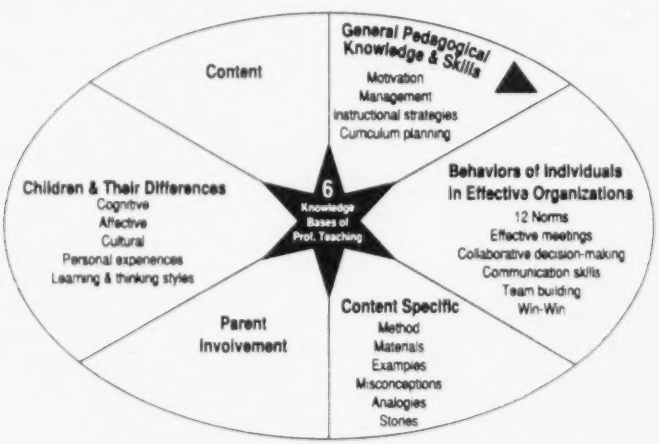
learn how to do. In a true profession, which teaching is not but must become, professional education proceeds with rigor from a systematic map of professional knowledge. With people past the certification stage, many options can be offered about pace, means, sequence, and method of learning . Individual goal setting for professional development can play a large role, but there are certain things from the professional knowledge base teachers simply cannot afford not to know.

Whether a teacher uses the techniques of Cooperative Learning, for example, and if so, when, with which students, and for how long on what kind of content must remain a professional decision. But whether or not to learn how to do Cooperative Learning at *all* (and at a certifiable standard of mastery) is not. Though this is not the place to lay them out, there are scores of other pedagogical skills that should be required tools in every teachers repertoire. Yet their very *existence* is unknown to the majority of practitioners (e.g., models of teaching, graphic organizers, modeling thinking aloud)

In the previous section we have profiled the structure and the areas of performance in the knowledge base on teaching itself, that is, general pedagogy; but there are other vital areas of knowledge for teachers too. We propose, therefore, the following taxonomy of professional knowledge in teaching with an eye toward how to bring *everyone* in the profession to a high level of knowledge and skill just as the nation is calling for high levels of achievement for all students in the 21st Century.

Six Knowledge Bases of Professional Teaching

Teachers, like any professionals, need to have a baseline of common knowledge and then need to pursue career-long learning in *all* the major areas of performance the job calls for. The following chart outlines areas of professional knowledge and skills commonly found in the literature. One of the six strands of this knowledge base is the study of generic pedagogy already described above. The chart following is a conceptual map of the others. A text description of these other strands can be found in Appendix A.



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In this section we have argued that a new concept is needed—a radical shift in the mental model about teaching knowledge that can motivate the respect and the investment in people our schools need. We have gone on to say that this shift is the *sine qua non* of educational reform—and that without its widespread understanding and adoption in this country, reform efforts are doomed to cycles of reinvention decade after decade. It is difficult, however, to get a nation excited about the power of an idea. We need to make some big changes in this country, and we need to get started fast. Big changes call for lots of energy and commitment from lots of mobilized people. It is difficult to imagine galvanizing a mass movement with marches, rallies, and bonfires at midnight on behalf of a "paradigm shift" about the nature of professional knowledge. There are, however, some misconceptions about professional knowledge which are widely accepted and whose acceptance significantly blocks the changes we need. In the next section we will outline these competing ideas and then examine what we can do to counter them. Rallies and bonfires may not be appropriate, but helpless we are not.

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2 WHAT IS GETTING IN THE WAY?

Four Beliefs

There are four roadblocks in our way—four erroneous beliefs. Unless we change them we will stay stuck in reform cycles of reinventing the past.

Belief 1: Teaching is easy.

Belief 2: There is no real knowledge base on teaching (and what there is is a relatively simple list of effective behaviors.)

Belief 3: Only the few "smart" students can really achieve to a high level in school. (Innate intelligence is what leads to achievement, not effort.)

Belief 4: And those "smart" kids would do well anywhere. Therefore teachers and schools don't really make that much difference as long as teachers are decent and the schools are safe.

The problem is our citizenry acts as if it believes **all four** of the above—(and so do most of our own people!) Evidence for the above:

Fact 1: After Abraham Flexner's 1910 report attacking medical education as inadequate, chaotic, without standards and without quality, public pressure and physicians' initiative created a true profession by reforming medical education and creating licensing boards with high standards. Medicine became a profession.

When John Goodlad wrote a similar book about teacher education in 1990, very little reaction could be felt. No tremors resulting from public agitation or internal rumblings caused seismic (or even modest) reforms in teacher education.

What could account for this?

Fact 2: When school budgets get tight and funds have to be cut, staff development people and programs are the first to go. Investing in the knowledge and skill of our people is viewed as expendable by school boards and voters.

What could account for this?

What accounts for it is beliefs that teaching is easy and any competent person should be able to do it; beliefs that teaching and schools don't really make that much of a difference anyway (because the smart kids will make it no matter what;) beliefs that teaching skill is pretty simple craft knowledge one can get from examining "effectiveness" research.

The truth is quite different.

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1) **Teaching is intellectually complex, difficult and demanding work**... work that requires a large repertoire of skills that must then be applied with well honed judgment. It is *not true* that any competent and reasonable person off the street can teach. Successful teaching requires the sophistication and complex thinking of highly developed architects, engineers, and lawyers. Such skills and judgment are developed only through lengthy study and apprenticeship in healthy, challenging but nurturing environments that expect constant learning. (If this leads you to conclude that the majority of today's teachers are not functioning at this level, you're right. Not that they're not good enough or capable enough people —but they are ill-prepared for the demands we are now making of schools, namely that they prepare all our children, not just some, for functioning at a 21st Century standard.)

2) **The nature of professional knowledge in teaching (or in any profession) is *not lists of effective behaviors;* it is a) Areas of Performance, b) Repertoire, and c) Matching.** Without thoroughly understanding both the *meaning* and the *implications* of this new mental model of what teaching knowledge is, and acknowledging that we *already have* such a knowledge base if we would look around us and pull it together systematically, we can never build a profession.

3) **The normal distribution curve need not rule**. It is not true that some people are genetically smart enough and the rest are not—and the smart will pretty much make it despite schools, and the stupid won't do well no matter how good the schools and teachers are. Good teachers and good schools can cut the bottom off the normal curve of student achievement if a) teachers believe they can, b) teachers are educated to true professional standards and c) their workplace conditions are those of true professionals —i.e., designed for constant consulting with one another, collaboration, joint responsibility for client results, and constant improvement.

The entrenched American paradigm about innate intelligence has been the hidden architect of our schools. The belief is that intelligence is innate and fixed at birth and that this fixed intelligence determines how much a person can learn and how much they can achieve in life. In contrast, a new paradigm about intelligence would say "confidence —> effort ———> development." (Howard 90) Thus, as in many other societies in Asia and in Europe, *effort* would be valued as the primary determinant of achievement. In contrast, the innate ability paradigm, with its built-in bias toward the normal distribution curve (in fact, its need to *produce* it) operates as the underlying principle behind both teacher behavior and school structures (like grouping and grading), contaminates the effectiveness of other innovative changes in structure and curriculum, and drains energy away from a belief that schools can truly work.

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4) **People who have this kind of professional background produce superior results for students**. It is well established in research but little acknowledged by the public that schools and teachers do, indeed, make a significant difference in student learning and thus their capacity to be productive workers and good citizens. (Edmonds 78; Lezotte 89; Schweinhart, Barnes and Weikart 93)

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3 WHAT CAN WE DO?

We can change the beliefs; and we can take decisive forward steps right now—steps within our districts using current resources that will advance professionalism right now while we work on changing public attitudes to support the bigger steps later.

Changing the Beliefs

Who is in a position to convince our public of the four new beliefs above?

Only educators. No one else can show and explicate the complexity of the teaching act.

How can this complexity be explained to lay people? We are not even very good at explaining it to ourselves! We would suggest that we need first a widespread dialogue among teachers, administrators, and teacher educators about the knowledge base issues raised in this paper so we can move toward a common language and concept system (which all true professions have). And then the real challenge begins.

To persuade the voting public that teaching is intellectually challenging, demanding and difficult work we need to be able to show complex teaching in public forums through videos to audiences who will listen to us explain the complexity and nuance in the teaching decisions they are witnessing. This means educators must go public and assertively seek out audiences at service clubs, town meetings, churches and religious groups, newspapers, TV public affairs shows, and dozens of other opportunities for reaching our public with the message that high level teaching is a complicated business. Second, we need to convince them that high level teaching and high performing schools do make a difference for students, and that the well-to-do have a high stake in having this kind of schooling available to the poor. And finally we have to convince them in the same forums that only high level teaching will do.

Tall order—but the fate of the nation rests as firmly on filling it as it does on controlling our monstrous national debt.

In addition to a public information campaign described above, we must begin deliberate steps to build a profession from within. This will be the decisive campaign. Public information may provide some pressure and support from without for the professionalization of teaching, but the changes must come from within. And unless our public sees them appearing within the next decade, public education as we know it, with its democratic commitment to quality educational opportunity for all, may cease to exist. It may be replaced by an elitist form of national, voucher-driven, subsidized, competitive private schools whose lesser

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echelons are made available to our cities and poor rural areas.

Finally, and in concert with the above, to give credibility to the argument that good schools and good teaching matters, we need to show by demonstration that fully trained professional teachers can get superior results for children — all kinds of children in all settings. In section IV we make a proposal for producing such evidence.

Professionalization from Within: 25 Incremental Steps

We can start right now with the resources we have to move incrementally toward professionalism in teaching; and we can move quickly. In the list below, we trace the evolution of teaching toward a hypothetical benchmark date of 2021 for reaching full professional status. At that point, state licensure would be tied to candidates passing performance assessments in key areas of the knowledge base — in our model, the six knowledge bases—essential to high level professional performance. Two distinguished bodies —The National Board of Professional Teaching Standards (Kelly 90) and the Council of Chief State School Officers (Miller and Darling-Hammond 92)—are working on such assessments, the first for advanced certification and the second for beginning licensure. We also need a parallel effort within school districts to generate readiness to pass these assessments by using the knowledge bases to steadily upgrade both the quality, comprehensiveness, and requirements for professional learning. *What we are arguing for is a commitment by every school district in the United States to play a part in the professionalization of teaching by taking the next most appropriate step given their current point of development.* The following section lists evolutionary steps in the creation of a profession as viewed from the standpoint of a school district. Readers can use the list to assess the level of development of the school district where they work or in which they are have an interest. (No district of which we are aware is beyond step 13 out of the 25.) We also intend the list as an approximate map for proposed next steps in the building of a knowledge-based profession of teaching.

These are progressive steps from the most primitive beginnings where professional education in the workplace is almost non-existent to fully developed professional education in a mature district.

Along with changes in the content, rigor, delivery systems and standards for professional education, readers will also see certain structural changes in the organization of the school (of student grouping and of teachers for the delivery of instruction) that would have to accompany the growth of a true profession. Along with professional knowledge must come organization that facilitates professional behavior. The school as a workplace must be constructed to support teacher initiative, risk-taking, collaboration, and constant learning from the professional knowledge bases.

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Steps to professionalization:

1. Occasional system-wide workshops are offered on education related topics. There is no necessary follow-up or connection between topics, but at least some time and resources are being devoted to talking about educational topics.
2. A district-wide catalogue of mini-courses comes out. Courses are offered by internal and external teachers on a variety of instructional and curriculum related topics. Teachers sign up for offerings that interest them on a purely voluntary basis. Certain sessions may be offered on system-wide release days, but most run after school.
3. District-wide staff development with follow-up appears on a consistent theme (e.g., writing process; cooperative learning; authentic assessment; inquiry learning). The district invests in substitute time for selected groups of teachers and urges buildings to use time at staff meetings and other forums for follow up and extension.
4. Administrators together begin studying instruction and supervision through a focus on teaching, observing, writing, and conferencing .
5. The district trains internal trainers to give continuity to staff development efforts in the themes undertaken during previous phases. These trainers are given modest resources (e.g., prep time, release time, exemption from duties, reduced teaching loads, stipends, small budgets) to enable them to continue delivering the training.
6. The supervision and evaluation system of the district is revised into a multiple year Professional Development Cycle emphasizing collaborative work among teachers and peer coaching. Traditional "evaluation" is reserved for once every three or four years and yields no ratings, rankings, or comparative scores for teachers.
7. Courses in Generic Pedagogy are offered. The District takes the position that there is a knowledge base about generic teaching skills.
8. System-wide commitment is made to strengthening school culture. (Saphier and King 85) Administrators study it and their evaluation includes it.
9. Internal trainers are trained to teach an extended range of modules in generic pedagogy. Certain modules become required for study by newly hired teachers sometime in their first three years in the system.
10. Study groups led by teachers appear in each building on topics related to curriculum and instruction. Their schedule is built into the school calendar and protected; teacher participation is voluntary.
11. Mentors are selected and all new hires receive support from one.
12. Mentors begin systematic training in conferencing, coaching, and observing and analyzing teaching.

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13. Multiple learning experiences over several years are now required of newly hired teachers leading to tenure. The experiences include a variety of settings (courses being only one) for studying generic pedagogy, content-specific pedagogy, and curriculum commitments the district has made to the community.
14. The role of "mentor" is formalized and given status within the district. Mentors teach no more than 60% of their contracted time.
15. "Provisional Teachers" who enter employment in the district with a teaching license already in hand are required over a period of years to meet performance standards in certain areas of professional knowledge in order to advance to "Professional Teacher" status. The district uses the services of internal assessors and external agencies to "certify" proficiency in certain areas of knowledge and skill.
16. The district is operating from a cohesive and comprehensive map of professional knowledge. The district is able to deliver professional education experiences from its map of knowledge through in-house trainers, mentors, consultants, and the services of university collaborators.
17. Building-based structures now exist in each school for collaboration and consulting among teams of teachers jointly responsible for groups of students.
18. The school district creates a career ladder for teachers with three or four major steps/levels. Steps on the ladder are keyed to the ability to demonstrate teaching proficiency in specified areas of knowledge and skill through performance assessment, not classical teacher evaluation by administrators.
19. Newly hired "apprentices" working at less than full teacher salary are placed on already functioning teams in designated "Certification Schools." Apprentices are enculturated to collegiality, experimentation, and high standards of professional practice. Apprentices engage in a rigorous series of learning experiences over a three year period leading to certification and beginning "professional status" within the district's career ladder.
20. Mentors and other teachers play a formal role in certifying provisional teachers and apprentices.
21. Study groups are seen in operation at each school on topics of professional knowledge. Topics are selected and groups are led by teachers. Participation in a certain quota of study groups is mandatory for all teachers though choices of which are left open.
22. State law as administered by the State Department of Education requires demonstrated mastery of specified elements from the six knowledge bases for initial certification, and other elements for recertification at specified intervals.

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23. The National Library of Professional Teaching Knowledge, located at a major university, houses an ever expanding storehouse of resources in the six areas of professional knowledge and makes them instantly available free of charge in digital form, on line, to every school district and teacher training institution in the country.
24. The National Teaching Standards Board[4] disseminates performance tasks from the six knowledge bases to member states and to teacher training institutions.
25. Colleges and universities are providing first class graduate programs in all six knowledge bases.

No claim is made that the steps in the list above are strictly sequential. The order may vary, and several could be undertaken simultaneously. Some important steps may be left out. But the steps do represent important and distinctly different benchmarks, we think, in the progressive development that must occur to create a true profession.

Readers may have heard echoes of their own district's staff development history as they read through the steps. In the 1980's, some school districts moved beyond random and eclectic staff development offerings and adopted themes (like process writing, or cooperative learning) around which they built cohesive and durable training programs. Some trained internal trainers to keep the cycle of practice-feedback-coaching alive and to pick up newly hired teachers and bring them up to speed on the instructional practices to which the district had become committed. Many of these training efforts were diluted by budget cuts of the early 90's or by key advocates in administrative positions moving to new jobs in other districts. Nevertheless, models were developed and shown to be effective for districts generating in-house capacity to raise and maintain expertise in their teacher corps in particular instructional practices.

Also in the 80's, some districts adopted courses on aspects of the knowledge base on teaching that had the new view of teaching knowledge we have described on page 6-7 built in (Department of Defense Dependents Schools, Appleton, Wisconsin; Chappaqua and Mamaroneck, New York; Newton, Cambridge, Lincoln-Sudbury, Concord, Needham, Natick, Massachusetts.) Before long they had their own internal trainers teaching these courses and were requiring new hires to take them sometime in their first two years.

These were significant steps, for they now meant some school districts were willing to take a position that there really was a knowledge base on teaching, and further, that professionals in their district had to be constant students of it. The courses were designed to embed collegiality and experimentation and foster risk-taking and mutual support among teachers as well as help them expand their teaching repertoires.

[4] This board is not currently in existence. The National Board of Professional Teaching Standards, however, could easily evolve into this kind of professional certifying board.

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Some of these same districts started mentor programs for hew hires, and a very few, extrapolating from the implications of the knowledge base, decided that mentors needed to be thoroughly trained not only in the knowledge base, but also in observation, feedback and coaching skills so they could be articulate about what they know... also so they could be explicit in helping their mentees self-analyze and improve.

The next step for districts with these highly trained mentors will be to involve them more formally in the evaluation process and in decisions about continuance and tenure for new teachers.

Each of the steps described above takes the teaching profession in that district one step higher in its development. We ask readers to place themselves on the chart and ask themselves, "What would be the next step up for us?"

It may be a critical step in professionalization for all the administrators in a district to study the knowledge base on teaching together (step 4). It is a fact that in all the districts where we at Research for Better Teaching have been involved in professionalization efforts since 1979, administrators studying teaching in depth, at length, and together has occurred. It was not because we saw such study then, as we do now, as a critical strategic step in professionalization; it was because administrators wanted help in getting better at supervision and evaluation. It is, however, impossible to get better at supervision and evaluation without becoming a better observer of teaching; and it is impossible to become a better observer of teaching without knowing what to look for; and it is impossible to know what to look for unless one studies teaching itself. And to make analysis and feedback to teachers fair and helpful, one must approach the teaching one has observed by thinking of teaching skill as Areas of Performance, Repertoire, and Matching—not looking for the presence or absence of "effective behaviors." Thus the leaders of a school district signal that they take teaching seriously when they study it, and when they spend effort and time observing teachers and engaging in serious dialogue about teaching from the "repertoire-matching" point of view rather than the "effectiveness" point of view. Absent this, it is very hard to see how any district could move itself forward toward professional standards of practice. Therefore we believe it is very important for administrators to engage in this study and develop skills together. Good supervision and evaluation from within becomes a critical step in professionalizing our business.

Step 6 references changing evaluation procedures so that a) administrators have a reasonable span of control (only 8 to 12 people to evaluate) and so that b) the bulk of the resources of the system available for supervision are focused on teachers working with one another outside of formal evaluative events. Elsewhere (Saphier 93) we have described practical procedures for accomplishing these objectives.

Another key step is administrators' commitment to studying school culture (Saphier and King 85) and to improving it school by school. This includes understanding exactly what collegiality is (Little 82) as distinct from conviviality (Barth 87.) Districts that undertake this seriously (Newton, Massachusetts for example)

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have superintendents who supervise and evaluate principals for their ability to strengthen adult cultures of collegiality and experimentation, and who build these elements of the culture into the core values of the school system. It is in this context then—building school culture—and particularly that element of school culture which calls for constant learning, that structures like teacher-led study groups can be started in individual buildings. Eventually, as in other professions, we will require professionals to participate in these internal structures for study just as medical professionals do in good hospitals (Grand Rounds and weekly conferences sponsored by departments for review of cases and new promising practices are required in teaching hospitals.)

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4 NEW LENGTH AND NEW SCOPE FOR TEACHER EDUCATION

Once again, we urge readers to examine the steps, put their district on the map, and consider taking the next vertical step as a proactive move toward professionalization in their district.

How can our teachers learn all they need to know? With our current beliefs, they can't. With our current structures (which are the consequence of our beliefs) they can't. The previous section of this monograph was about individual districts taking the initiative from within to move themselves forward the next appropriate incremental step toward professionalization. In this fourth section we move to teacher education and propose a model for accelerating professionalization. In this model all the attributes of a true profession would be activated at selected sites both visible and accessible throughout the country. These sites can be created by collaboratives of districts and universities. The project will be strongly data-oriented so as to prove that comprehensive teacher education and professional workplace conditions produce superior student achievement. In the pages to follow we will address each of the attributes of a profession presented on page one of this monograph.

Need for a New Model for Rigorous Training and Certification

Professional education leading to certification in any field needs to be long, deep, and thorough. A one-year M.A.T. won't do. We vastly underestimate the amount of education and range of expertise it takes to achieve high performance in teaching. If one carefully examines the range and depth of knowledge it takes to reach high performance, there can be little question that professional preparation to high standards requires the equivalent of at least three full years of graduate education before one assumes full-time responsibility for students. Neither our resources, however, nor our national attitude would allow that now. Students are willing to borrow money to pursue graduate engineering and medical degrees because these fields promise high pay later on. We are decades away from offering that promise in teaching (the Rochester, New York experiment notwithstanding).[5] In the meantime we will have to come up with alternative models to the high tuition university-based professional training other fields rely on today.

A second reason we need a new model is that there is a compartmentalization of knowledge between colleges of education and public schools that would not

[5] In the late 80's, Rochester revised its teacher pay scale so that experienced teachers assuming extra responsibilities could earn over $75,000 per year.

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exist in a true profession. Universities are superior repositories and learning sites for content knowledge and certain forms of content-specific pedagogical knowledge — two of the six strands of professional knowledge. Business schools and colleges with strengths in psychology, sociology, and organizational development are excellent sources for another one of the strands — leadership and communication skills and knowledge about organizational culture. Practitioners themselves are the people today who have the most capacity to articulate and teach the other areas of professional knowledge: pedagogy itself; parent involvement; differences in learners; integrative thinking in curriculum and lesson design.

The training of teachers needs to bring together these three sources of education in an integrated flow and bring their knowledge bases together into a *cohesive map* that serves as a common base for defining professional knowledge. And we need particularly to use the knowledge of practitioners in a way that is intimate and influential in the preparation and certification of teachers.

Finally, a new model for teacher training and enculturation is needed to build in the inculcation of beliefs and ethical commitments held in common by members of a true profession. We offer a sample in Appendix B of what they might be for teaching. It is not hard to get agreement on what such beliefs and commitments should be, but to design teacher education from a position of value and belief would call for a model substantially different from what we now have.

TEACHERS 21—Teachers for the 21st Century*

Despite the excellent reforms in teacher education taking place all over the nation and exemplified by such initiatives as the Holmes Group, the pace of change is too slow. Too many children are losing opportunities for learning, losing motivation, and losing hope every day. It is time to mobilize a new map of professional teaching knowledge and use the wisdom of practitioners to fill it in. It is time to become systematic and articulate with it, and involve teachers and their parent agencies—school districts—in a formal and authoritative way with teacher preparation, induction, and licensure. This alliance will create a new and clearly defined relationship between schools and universities as opposed to the erratic and light connections that currently exist. It is a model that will expand the impact of both institutions on what teachers know and can do. And it is a model we can start right now.

In this section I will propose a new training model for licensure and induction that makes school districts full partners in authority with universities and includes business and community agencies in the preparation of teachers to high professional standards.

Let us form a non-profit corporation called **TEACHERS 21** which puts forth the view of professional knowledge and skill presented in this paper. Let **TEACHERS 21**

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* **TEACHERS 21** is a federally tax-exempt 501(c)3 non-profit corporation based in Massachusetts. Its pilot projects to professionalize teaching combine the features described in this section of the paper.

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create a coalition between a few universities and school districts located near one another who are committed to advancing professionalism in teaching. Let us enlist business and community membership and form within the school district a Center for Professional Teaching Knowledge. ***TEACHERS 21*** will bring to this Center and its partners a comprehensive and systematic map of professional knowledge and help the district (or consortium of small districts) work together with local colleges and universities to develop learning experiences and performance assessments for specific teacher competencies.

The competencies will be tied to the six areas of professional knowledge and be consistent with the competencies developed by the Interstate New Teacher Assessment and Support Consortium (INTASC), the National Board of Professional Teaching Standards, and the Educational Testing Service (PRAXIS). (For an example of what such competencies might look like see Appendix C.)

To summarize, the ***TEACHERS 21*** Foundation will provide advice, models, and technical assistance to school district-university partnerships at selected sites around the country so they can offer systematic learning experiences and performance assessments in all areas of professional knowledge. Our focus at first will be on training apprentices and inducting newly hired teachers through high quality "residency" experiences for three years. The project, however, will also create systematic career ladder experiences for veteran teachers that can count toward recertification or advanced certification.

In the model we are proposing it becomes highly desirable to form special schools within the district where apprentices or resident teachers are concentrated, remain for several years, and are paired with veteran teachers and mentors in team teaching structures. Let us call these Professional Residency Schools. The "Center for Professional Teaching Knowledge" in the district will probably not be a physical place, but rather a roster of school district employees and others who teach courses, lead seminars, conduct workshops, and do demonstration lessons in the classes of residents and apprentices who are concentrated in these special schools. The Center will have a small permanent coordinating staff. It will have the responsibility for overseeing the preparation of apprentices to meet state licensure and certification requirements. It will also oversee the preparation of "residents" for passing performance assessments selected by the district and required for tenure after three years. In addition, the Center's clientele will be all teachers who are employees of the district.

The Center will contract with colleges, universities, and outside agencies for courses and professional development experiences that cannot economically be delivered by district personnel but that are congruent with the "map" of professional knowledge. The Center seeks to develop renewable in-house capacity for as many experiences as possible connected with the map of professional knowledge.

TEACHERS 21 provides startup and maintenance funding for the Center's teaching staff. Together with a partner university it provides initial training and certification for mentors to the residents. It also trains "Lead Teachers" in the Professional Residency Schools for their new responsibilities. Lead Teacher is a new

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role; these individuals will not teach full time. Lead Teachers will be responsible for curriculum coordination across the team (grade level teams, middle school cross disciplinary teams, or high school subject area teams) and also for curriculum integration. In addition they will be the supervisors of the resident teachers and/or apprentices and responsible for their continuing education, growth and development. Individuals filling this role are expected to bring curriculum and unit design expertise as well as expertise in supervision to the team of teachers with whom they work. Ideally they would be National Board Certified or candidates for certification.

The Center also coordinates development committees that create learning experiences and assessments for the competencies from the professional knowledge base. To accomplish this task the Center brings together district experts, outside consultants, and university professors with relevant expertise to assist in designing competency-based experiences for apprentices and newly hired teachers. The committees also develop learning experiences and competency-based assessments for already certified teachers on advanced knowledge and skills that can be used toward career ladder advancement.

Resident teachers (and of course apprentices) are not fully competent to practice independently in their first year. In all other professions neophytes practice side by side with veteran practitioners and receive on-going mentoring. A Professional Residency School is created to fulfill this same purpose and might be configured as in the following diagrams if it were an elementary school.

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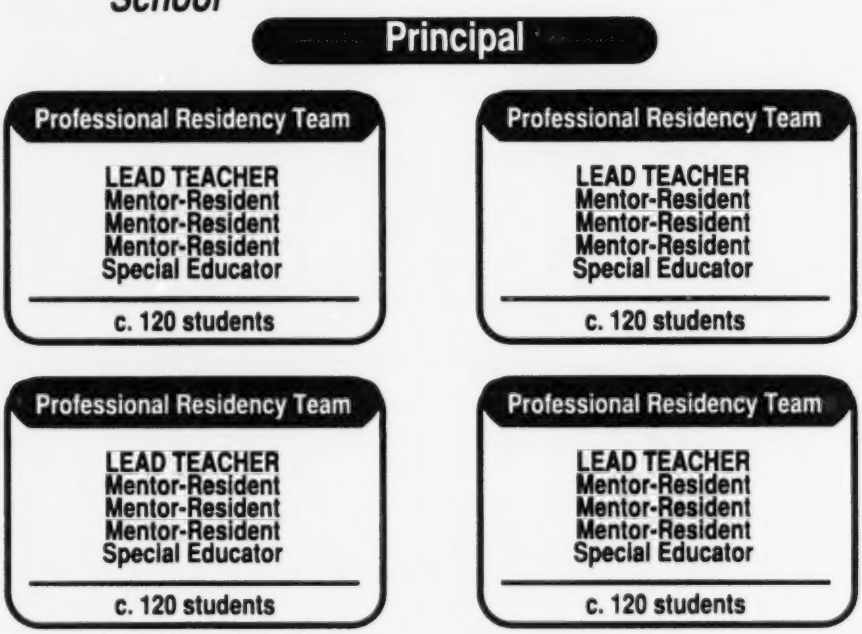
One Model for a Professional Residency School

Staffing



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The word "Resident" in the chart refers to teachers in their first three years of practice. If the apprentice model were being followed, fewer apprentices would be assigned to each team because apprentices would not be responsible for a full time teaching load as a "resident" teacher would.

"Apprentices" would be people with bachelors degrees in subjects other than education who aspire to professional teacher status. They would be employed by the school district for three years at 1/2, 2/3, and 3/4 salary respectively prior to licensure by the state and awarding of an MAT degree from an affiliated university. They deliver services for fees paid and are not subsidized by the school district. They have time free during the workday for course sessions, meetings with mentors, and observations.

It would be highly desirable in support of this model to organize a "Pyramid of Schools," that is a feeder pattern of a high school and its feeder middle school and elementary schools. All these schools would be organized internally into true teams where groups of adults have joint simultaneous responsibility for the program and for the learning of groups of students and remain with them for multiple years. The teams would be organized to employ "apprentices" as aides without full teaching responsibilities, but with expectations for almost daily contact with students, and participation in team meetings. In the "induction" version of the plan where there are no apprentices, newly hired teachers would be paired one to one with veteran teachers who were their mentors and would operate under the leadership of a Lead Teacher who was responsible for curriculum coordination, curriculum integration, and supervision of the resident teachers. The extra funding for this Lead Teacher position could come from the expanded staffing ratios made possible with team structures and the lower salaries owed to resident teachers who are at the low end of the scale.

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[7] The plan for apprentices described above applies to newly hired licensed teachers as well during their first three years of service in the district. Since licensed teachers they have full time teaching duties, they have less time available during the day for professional development work. They do, however, have mentors and are expected to pass performance assessments in certain areas over their first three years.

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One Model for a Professional Residency School

Characterisitics

Looping

Teachers stay with groups of students for multiple years.

Scheduling

Revised time schedules allow for significant interaction between mentors and residents.

Highly Qualified Mentors

Teachers serving as mentors are highly qualified and receive specific training in adult development.

Differentiated Staffing

Lead Teacher may have reduced student load; conducts periodic team reviews of student progress.

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The affiliated university or universities will participate in the development committees for learning experiences and assessments with the Center and provide contract competency based courses to the Center.

Separately, let the foundation start a "National Library of Professional Teaching Knowledge" to unify what is known in the six knowledge bases, to get teachers to articulate for the profession what they have invented in isolation for teaching specific concepts, to collect video-taped examples of teaching skills, and to make its resources available on-line, free, and in digital form to every school district and college in the country. The "National Library of Professional Teaching Knowledge" becomes the first library in educational history to be a "virtual reality." It consists, in fact, of a network of member Centers for Professional Teaching Knowledge in districts that are working with ***TEACHERS 21*** and linked by the information highway.

The Library network will provide access to an ever expanding storehouse of resources in the six areas of professional knowledge. A small staff will assume the responsibility of creating user friendly ways to pipeline current research directly to school users.

An Evaluation and Research Group affiliated with ***TEACHERS 21*** will study the connections between student achievement and teacher competencies that result from training and inducting teachers into the profession in the rigorous, knowledge based way proposed here. It will also study the effect of the program on teacher quality and retention. We will need to collect intensive data over the first eight years of the project and use it constantly to adjust the program.

Finally, in pursuing the vision and the model represented above, it will be necessary from day one of implementation to work to educate the public about what we are doing so we can finally liberate the project from the status of an experiment and secure public funding for its institutionalization. It is important to have a well thought out campaign using the media to convince the public of the complexity of teaching and also of its importance—namely that the quality of teaching and the knowledge of graduates in inner city Detroit, Los Angeles, and New York affects the lifestyle and standard of living of citizens in Scarsdale, Palo Alto, and Weston—and that the knowledge of those graduates is directly tied to the skill of their teachers.

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5 OTHER FACTORS IN THE CHANGE PROCESS TOWARD PROFESSIONALISM

Reshaping the Workplace for Professional Practice

Culture of High Consulting and Collaboration

What makes the task of professionalization so complicated is that the work place of school itself needs to change its shape and structure to allow professional working conditions—i.e., a) time for reflection, b) expectation and access for consulting with colleagues, c) joint responsibility and public accountability for results with children. Numerous national experiments like the Coalition of Essential Schools have attempted to change school structures in these ways with uneven success.

We *do* know what the changes for effective "restructuring" should be, and we have known them for some time;[8] but" restructuring" has not only proven difficult to carry out, it has not shown results beyond isolated schools. (Perhaps we should say *because* restructuring has proven so difficult to implement, it has not been able to achieve results beyond isolated schools.) Schools that *have* implemented key ideas (e.g., Pioneer Valley High School, Northampton , Mass.; Central Park East High School, New York, N.Y.) and shown results prove that the ideas are sound; but the paucity of successful sites makes us wonder why.

It is true, nevertheless, that professional preparation for knowledge and skill in the six areas we espouse *has to take place in restructured schools* that embody professional workplace conditions, otherwise apprentices and teachers have no time to study. In addition, while learning how to teach, candidates also must learn how to work together with other teachers as professionals do. Their training itself must enculturate them to collegiality, experimentation, risk-taking, and constant learning. A chain of authors from Peters and Waterman (82) to Senge (90) reaffirm the necessity of these qualities in the workplace if organizations are to be high performing. The "professional development school" was created over the past decade to embody some of these attributes. It needs to be upgraded to a formal training site for candidates for licensure. (Currently professional development schools are places where already licensed teachers come for 4 to 6 week in-district sabbaticals or places where newly hired — and already certified — teachers come for their first year in the district.) In other words, we have to influence the whole system. Professionalization of teaching requires the simultaneous and integrated a) upgrading of teacher education to a knowledge based profession,

[8] John Dewey organized his laboratory school at the University of Chicago to be a place for the intellectual development of teachers as well as students.

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b) the restructuring of schools, and c) conversion of public opinion and d) the delivery of the equivalent of intensive three year training *through and in* the restructured schools.[9] *Candidates need to be reared, as it were, in a workplace that embodies the values of professionalism as a teaching hospital embodies the values of the medical profession.*

Systematic Enculturation of New Members

Apprentice teachers in the model we are proposing assume responsibility for children and for teaching at a slow and steady pace, but from their first year they spend the bulk of their time on site and as an assigned member of a team. They are not on the fringe nor are they merely observers; they are functioning members of a teaching team that models collegiality, experimentation, consulting, and collaboration. Their responsibility for children, however, is at the level of instructional aide so as to allow time for study, reflection, classes, and seminars. Enculturation takes place by a kind of immersion in teachers' work with the obligations sufficiently lightened to allow for intensive study. During this time they are under the watchful eye of a mentor or a mentoring team with their personal professional growth in mind.

This is by no means the only scheme within teaching for doing the enculturation a true profession would provide for new members; but it is certain we will not have a fully developed profession until we have broadly implemented models of this kind.

Required and Continuous Learning Built into the Work Cycle

"Pyramid schools" in the ***TEACHERS 21*** model would have schedules designed to support rigorous and continuous adult learning. Such a schedule costs money. Japanese elementary teachers spend only 60% of their time in direct contact with students and are expected to spend the rest of their workday planning, preparing, and working together. (Stephenson and Stigler 91) It is a struggle to make these arrangements in the U.S. given the attitude of the public toward funding teacher planning and development time. Many successful approaches to creating common planning time, however, already exist. (Raywid 93) It might be necessary at the outset; however, to use private funding from the ***TEACHERS 21*** Foundation to insure such planning and professional development time. Ultimately it would be the challenge of ***TEACHERS 21*** to prove that investment was worthwhile.[10]

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[9] "'You know what's wrong?' and they'll name one thing...Well, one thing is not the problem. You must try to change it all at once—all of it. If you don't change it all, the one thing you do change will not survive." The developer Charles Rouse talking about the Sandtown center city redevelopment project in Baltimore in The *American Way* Magazine, "The Smell of Hope" by Tom Stephenson, 26/6, March 15, 1993, p. 57 - 58.

[10] The inaccurate view of teaching as "easy work" leads to expectations that teachers should already know how to teach. "Other professionals pay for their own professional development and do it on their own time," one is likely to hear. This is the argument turned on its head, since professionals who arrange their own development are paid in a range to afford it, have the status and working conditions of a profession. The argument also misstates the facts: professional development is, in fact, built into the daily schedule of the workplace in hospitals, law firms, and most highly successful manufacturing and high tech companies.

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Restructuring to create time for organized and continuous learning in the workplace can be advanced through legislation. A constructive role for state legislatures would be to require teachers to obtain recertification every five years as a number of states have done. Such a broad mandate leaves plenty of latitude for professional organizations to define what recertification will mean, yet give a public imprimatur to built-in staff development. Left at that, however, the staff development might remain as eclectic and unfocused as now.

A productive role for a State Department of Education would be to maintain a map of professional knowledge and require teachers to select items to learn from each of several categories on the map during the five year period—somewhat like a college distribution requirement to pick one course each in Humanities, Science, Language. Choices might be more limited in the early years of one's career as teachers came to master certain areas thought to be vital to all practitioners in common, or to teachers of certain specialties; and more open in later years as one's experience grew. Ten years from now we would hope that map would be a standard from state to state because a consensus had been achieved in the profession about the nature and outlines of the knowledge base, and that it would include all of the six areas we have described above.

To gain recertification a teacher would have to demonstrate competence *by performance* in the area selected. The teachers could use any resources available to gain competence—probably relying heavily on the Center for Professional Teaching Knowledge their own school districts.

High Public Accountability

When the bridge falls down because it was underbuilt, to whom do the city fathers come with their grievance? The engineers. When the house cannot withstand the snow load on the roof, or the beautiful picture windows overheat the living room, or the foundation isn't deep enough for the land conditions, to whom do the clients come for redress? The architect. When the attorney fails to gather and present all the evidence that was available for defending his client, whom does the client sue for malpractice? The lawyer.

When students don't learn, whom do we blame? The family; the society; the times; the student.

Suing schools for the failure of children to learn has occurred several times in the past decade, and has been taken as a sign of despair at the capacity of public schools to serve children adequately. Full status as a profession will not entail adding lawsuits to our already overly litigious society, but it will entail a sense of responsibility for how the students are doing, responsibility for attaining student outcomes for which educators will be held accountable. In this context, schools and districts might begin reporting to their communities annually at a sort of "Town Meeting" the efforts, problems, and goals of the previous year and involve citizens in setting goals for the next year. This happens now throughout Vermont.

Already underway are the creation of national standards for student perfor-

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mance (Simmons and Resnick 93) that are specific, high, and measurable by authentic performances rather than just multiple choice tests. The creation of national standards will support that aspect of professionalism which creates common images of quality available for public inspection, and allows us to report meaningfully to the public how our institutions are doing. If hospitals are accountable for patient recovery rates, so should schools be responsible for student learning. The call for such accountability will justly provoke the push back from schools and school people for more professional working conditions and more autonomy with budgets, hiring practices, and curriculum.

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6 CREATING A NATIONAL PROFESSIONAL ORGANIZATION

A true professional organization is built on an ethic of high standards, by which we mean a felt responsibility to serve clients with the best current knowledge available and at the highest standards of personal practice. The previous section on accountability to the public has been about external standards publicly displayed and results publicly revealed so as to keep a practitioner on his/her toes. When you know your work is going to be inspected and held to high standards you tend to do your best. This section, on the other hand, is about internal forces that operate in a true profession to ensure quality. A profession takes upon itself the responsibility to monitor the performance of it's members and sanction those who fall below ethical standards or acceptable levels of competence. It also develops an ethic of responsibility to the client—in this case, students—through its certification and entry processes. Thus the following three attributes of a profession become manifest in the policies and practices of a well developed national professional organization: Internal Maintenance of High Standards; Responsibility for Client Results; Autonomous Decisions Guided by a Canon of Ethics.

Satisfying these last three attributes of a true profession bring us to the final phase of the transformation: creating a national professional organization. This may be the slowest part of the work to materialize. Creating a national professional organization such as other professions have requires much coalition building among already existing interests and groups. We advocate the creation now of such a seed organization which will draw its membership from already existing organizations like the Holmes Group, the National Board of Professional Teaching Standards, the several national teachers organizations, NCATE, the Council of Chief State School Officers and others. This board will have to bide its time and work with state boards of education to unify certification requirements, and above all, educate the American public about the importance of highly trained professional teachers. But while this effort should start immediately, the more pressing need is to start training and certifying teachers right now to meet the needs of the 21st Century. To that end we have made the proposals of section IV (The ***TEACHERS 21*** Proposal.)

Of particular importance in these ethical commitments will be the universally acknowledged responsibility for client results—in this case, children's learning. This moral underpinning will be the final and decisive move toward professionalism. When teachers have internalized the paradigm shift away from innate, fixed intelligence to "Think you can—Work hard—Get smart"[11], that is to believ-

[11] Howard, Op. Cit.

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ing in effort as the prime determinant of success, and when as a consequence they examine first themselves, their curriculum, and their program when children are failing, then we will know we are a profession.

The Future of Unions and the Need for their Partnership

What role will teachers' unions play in creating a national professional organization? Teacher unions as we know them today must lead the movement toward professionalism or see themselves eclipsed and disempowered.

Teacher Unions have served an important historical purpose in upgrading the status of teachers in the 20th Century. We have moved from a job for single women who sweep the schoolhouse floor, stoke the stove, board free with a town family, earn essentially only pocket money, and lose their job when they get married... to a job with moderate security, decent working pay, and slightly better social status. But now it is time for more.

Union leaders who are enlightened will seek an active role in the professionalism movement and advocate teacher involvement with evaluation and tenure decisions. They will also take a more assertive role in maintaining quality control and high standards of practice among already certified people. They will grow beyond blind defense of union members against management in personnel actions; the unions-become-professional organizations will start to see themselves assuming some of the roles of management itself.

There is a time of confusion and struggle ahead as teachers and their unions begin to change their historical definitions of who they are. Many in our current corps of teachers will be threatened by the notion that there exists a professional knowledge base for what they do, and that there is much in it they do not know. But there are also many thousands who will jump at the c to enrich their already well developed repertoires and work more closel id more effectively in collaboration with colleagues. Overall, however, momentum for change will come through new conditions of learning, certification, and enculturation for *people entering the profession*.

Over the next 10 years, the vast majority of teachers in our current teaching force will turn over.[12] If we do not move now and move rapidly toward implementing a true model of professional training and certification for teachers, we will lose another generation of children to low expectations, inadequate teaching and poorly designed schools. This is a national crisis that is first, of course, human in that we are talking about the lives of children; but it is clearly also a crucial element in our economic loss of productivity, the hemorrhage of high skill factory jobs and mid-level management positions to overseas competitors, and our failure to educate a diverse population to function as decision makers in a democracy.

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[12]Linda Darling-Hammond calculates that 2.0 million of the 3.3 million teachers we expect to have in teaching by the year 2000 will be new people. (A paper written for the National Commission on Teaching and America's Future, Nov. 1994. "The Current Status of Teaching and Teacher Development in the United States.")

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The power of ideas is and always has been great. When our concept of a flat world changed to a belief that the world was round, revolutions in transportation and trade became possible. Tremendous energy and entrepreneurial activity were released. Similarly, changing our concept about the nature of teaching knowledge can liberate energy and focus in our society—the kind of energy and focus we need to make the improvements in our schools that have so often been conceptualized but not implemented. When we see this change in paradigm about what teaching is, it will indeed be an event worthy of bonfires; for all our other best ideas will then finally be able to take—and stick.

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APPENDIX A — SIX KNOWLEDGE BASES OF PROFESSIONAL TEACHING

Strand 1 — Generic Pedagogical Knowledge and Skills

Strand 2 — Content Specific Pedagogical Knowledge

Stories, Analogies, Examples, Misconceptions, Materials, Activities

For second graders there is a particular way to use orange and white Cuisenaire rods to illustrate place value; furthermore there are a set of progressive games for them to play with those materials that are very effective in helping youngsters acquire real understanding of place value and fluency with the notation.

At fifth grade there are a certain set of practices and procedures that are very effective in helping youngsters learn to do peer editing conferences well for each other.

For Jr. H.S. students there is a very useful set of materials put out by "The Regional Math Network" under an N.S.F. grant in 1987 that has realistic word problems that connect with adolescents' interests.

The above items refer to a particular kind of knowledge teachers accumulate over their careers—knowledge of particular materials and particular instructional strategies and procedures for teaching particular content to students of particular ages. Learning these specific methods and materials and how to use them must be part of the on-going education of a professional teacher, whether a beginner or a veteran.

Part and parcel of this area of knowledge is the fund of good examples and analogies to use for particular concepts (e.g. the mailman delivering a bill as analogy for negative numbers) and the knowledge of common misconceptions students are liable to bring to instruction (e.g., all rivers flow north to south) so they can be explicitly surfaced, contradicted, and new and accurate conceptions developed.

This kind of knowledge must be part of the professional preparation of teachers and opportunities to learn in this area built systematically into both beginning and continuing teacher education.

Strand 3 — Academic Content

Teachers of chemistry must continue to expand and deepen their own knowledge of their subject. This not only enables them to bring the latest and best knowledge to their students, but keeps teachers personally revitalized and en-

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ables them to meaningfully model being learners themselves for their students.

The same can be said for teachers in any discipline.

At the elementary levels there is likewise a need for teachers to understand at a deep level certain concepts that are embedded in their curricula. For example, understanding the true nature of a "variable" is too little understood by a large portion of elementary teachers who consider themselves "not scientists," yet are responsible for teaching it to their students. Studying the content they teach is a necessary and on-going part of the continuing education of all professional teachers and must be accommodated in the design of this program.

Strand 4 — Differences

Strand two is the study of differences—differences in learners. Understanding and adjusting for differences in learners calls for the most artistry from teachers as they draw on their repertoire in all other strands to optimize learning environments for students. It is in this strand that the all important issues of child development are addressed, both cognitive and emotional development. This knowledge is essential to doing good "matching" in making selections from one's teaching repertoire.

But there are other kinds of differences that are very important for teachers to understand.

- There are differences in learning style, including perceptual preference and the ways individuals process information. Adjusting instruction for these differences and teaching students to use knowledge of their own learning styles to their advantage can significantly enhance learning rate and durability. Learning how to do this will be part of teacher training.
- There are differences in cultural style between youngsters of different ethnic and regional heritage's, differences that have significant impact on the attitudes and approaches youngsters bring to school. Teachers will bring an understanding of these differences to instruction.
- There are differences of race, color, and language that similarly influence students self-concepts as learners and their approach to school and to others who are different from themselves. As we become a nation where the minorities are the majority, it is crucial that teachers help students to cultivate appreciation of their differences rather than rejection or suspicion of those differences from oneself. Our curriculum, will educate teachers specifically about these differences and how to help students deal with them positively.

Strand 5 — Individual Behavior in Effective Organizations

This strand of the knowledge base focuses on the individual's participation, influence, and initiative in the "system" of the school. We know that the school as a whole is a system that has a total effect on the learning of the child; and

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teachers are members in that larger system. Study of this knowledge base enables teachers to understand that system and play active and positive roles in strengthening the school as a whole. One area of this knowledge base is the norms of culture in a healthy growth oriented workplace for adults and knowledge of how to build and strengthen them.

Schools that get results for children are schools where the adult staff members

- feel good
- work hard
- keep learning
- and believe that together they can make a difference for kids.

At one level this is only common sense, but in the priorities and practice of American schools it is uncommon practice.

Surprisingly it is only in the last decade that researchers have investigated the link between the quality of life in the workplace for adults and the productivity of the school for children. It is not surprising, however, that we now have good data to back up the claim above (Little 82; Rutter 79; Purkey and Smith 83; Rosenholtz 85).

The argument is deceivingly simple, but its components are many and subtle. The argument is this: the foundation of progress, the foundation of a plan—any plan—for school improvement is the energy and productive working relationships of the people in the organization. If the school as a workplace is challenging, satisfying, and growth-oriented for adults, it liberates the creativity and energy of those who shape it...and no matter how good it is now, they work to make it constantly better.

Not only do we now know this to be true, we know a good deal about the elements of such an energized, productive environment. The 12 elements are listed below, and strengthening them must be the overarching commitment of any school organization that wants to get real and enduring results for children.

- **Collegiality**
- **Caring, Celebration, and Humor**
- **Experimentation**
- **Protecting What's Important**
- **High Expectations**
- **Traditions**
- **Reaching out to the**
- **Tangible Support**
- **Knowledge Base**
- **Appreciation and Recognition**
- **Involvement in Decision-Making**

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- **Respect and Confidence**
- **Honest, Open Communication**

Strengthening these qualities of human interaction in the district and within the schools at all levels is the foundation of attaining key results for children in our classrooms. Knowing one's role in this complex process must be a part of a teacher's professional knowledge base.

In addition to the 12 norms of school culture, there are other areas of knowledge pertaining to healthy organization behavior that teachers need to know and be able to do. Teachers go to meetings; principals go to meetings; counselors go to meetings; everyone in schools attends grade level meetings, faculty meetings, department meetings, meetings of all kinds. Yet how many of us have studied the preparation for, dynamics during, and follow-up afterward that make for successful productive meetings?

How to lead and participate in effective meetings is only one aspect of effective organizational behavior. Others include communication skills (e.g., how to Active-Listen and send "I" messages,) win-win negotiating skills, legitimate decision-making processes, goal setting and plans of action. Teachers should study and become proficient at these skills and expect to be a contributing member of the larger school as an organization, not just in spirit, but in action.

Strand 6 — Parent Involvement

The most important form of parent involvement is involvement in the education of their own children. It makes a huge difference that parents communicate to their own children that they believe education is important and that they (the children) can do well if they work hard and use good strategies. Teachers can learn a great deal about effective communication with parents and the home to augment parents' ability to carry out the communications described above. Teacher education is the 21st Century, especially in urban areas, needs to include knowledge and skill at reaching parents and finding ways o involve them constructively in the life of the school and in the education of their own youngsters.

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Appendix B — Teacher Beliefs

The *Teachers*[21] Program offers concrete experiences designed to nourish the following beliefs in apprentice teachers:

Belief about intelligence and childrens capacity to learn

1. "You can get smart." Children's learning is primarily determined by their effort and use of effective strategies. "Intelligence" is not a fixed inborn limit on learning capacity. Thus, all children can do rigorous academic work at high standards.
2. All children want to learn, and have learned a lot through their cognitive capacity to analyze, see patterns, and persevere. Children can learn successfully despite adverse home and societal conditions.

Beliefs about learning itself

3. Learning is constructed as learners assimilate new experience with prior knowledge.
4. Learning varies with the degree to which learners' needs for the following are met: inclusion, influence, competence, confidence.

Beliefs about teachers and teaching

5. I create a psychological and cognitive environment that has an enormous impact on what and how children learn. Therefore it is my professional responsibility to create an environment in which each child can succeed. Such an environment is characterized by community, mutual support, risk-taking, and higher level thinking for all.
6. The nature of professional knowledge is "task areas [missions], repertoire, and matching." Therefore my learning can never be considered finished. I must constantly enlarge my repertoire, stretch my comfort zones, and develop my ability to match students so I can reach more kids.
7. Professional knowledge of a teacher requires systematic and continual study of 6 knowledge bases: 1) Content; 2) Pedagogy; 3) Content-specifc pedagogical knowledge; 4) Children and their Differences; 5) Behaviors of Individuals in Effective Organizations; 6) Parent and Community Involvement.

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Beliefs about schools and schooling

8. The total environment of a school has a powerful effect on students' learning. Therefore I must participate actively with my colleagues as a shaper of the school-as-learning-environment; I must see myself as a player beyond my classroom and responsible for the "system" of the school.
9. Parents greatly influence their children's learning. I can help them do it well. Therefore I must consider parents and families as part of the school, and extend myself to include them constructively in the education of their children.
10. The purpose of schools includes helping students live fuller lives and being able to contribute to making a better world. Teachers' work makes an important contribution to a better world.

Other Thoughts:

All teachers are: teachers; learners; leaders; followers.

Teachers – shapers of the educational environment for their students and creators of learning experiences for them

Learners – always learning more ways to match what they do with students

Leaders – influencing and collaborating with staff to improve the school and help individual students

Followers – willing to give up some autonomy for actions implied by common visions; and followers of the leads that students provide for how to guide their learning.

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APPENDIX C

I. Generic Pedagogical Knowledge and Skills

1. The successful teacher operates from the relentless belief that all students can do rigorous academic work at high standards. This belief shows in performance in daily classroom interaction. Thus the successful teacher can communicate high and positive expectations to all students.
2. The successful teacher can build a class climate for students of inclusion, confidence, risk-taking, and control.
3. The successful teacher can explain and implement lessons with full congruence between well developed Objectives, Student Learning Experience, and Assessment.
4. The successful teacher can design and implement varied learning experiences for students that match students learning styles.
5. The successful teacher can maintain a smooth orderly flow of events by prior planning and provisioning and by anticipating obstacles in advance.
6. The successful teacher can vary spatial arrangement to match instruction.
7. The successful teacher can create appropriate and efficient routines and procedures for recurring events.
8. The successful teacher can use time efficiently and plan time segments for appropriate duration and variety of format to match students and curricula.
9. The successful teacher can use an appropriate variety of moves to maintain student attention.
10. The successful teacher can build relations of regard and respect with students.
11. The successful teacher can use a variety of explanatory strategies, tools, and technologies to make concepts clear and vivid for students with different learning styles.
12. The successful teacher can use a variety of instructional strategies to develop students' critical thinking, problem solving, and performance skills.
13. The successful teacher can anchor student understanding by: choosing appropriately from a repertoire to activate students' knowledge, anticipating confusions and misconceptions, making objectives clear, establishing connections to prior knowledge, getting students cognitively active in summarizing, checking for understanding, and unscrambling confusions.
14. The successful teacher can apply Principles of Learning effectively and

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appropriately.

15. The successful teacher can display a repertoire of ways to make crystal clear and public at the outset of instruction the criteria for success with good models of what it looks like.
16. The successful teacher can design and implement authentic assessment tasks and rubrics that measure student performance in comparison to the criteria.
17. The successful teacher can generate intimate involvement of students in self-assessment, collaborative critique, and goal setting.
18. The successful teacher can gather data on student knowledge and skill in multiple ways and keep records that are clear,accessible, and efficient.
19. The successful teacher can design series of learning experiences that show continuity, sequence and integration and that connect to students' personal meaning.
20. The successful teacher can establish clear standards for classroom behavior and maintain them with consistency, fairness and logical consequences.

II. Content

The successful teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students. (INTASC 1)

III. Content Specific Pedagogy

1. The successful teacher can represent and use **differing approaches, viewpoints, theories, "ways of knowing" and methods of inquiry** in his/her teaching of subject matter concepts, and match the approach to the needs of the learner. (INTASC 1)
2. The successful teacher has accumulated a repertoire of methods, technologies, materials, activities, stories, analogies, and examples for teaching particular content.
3. The successful teacher can evaluate **teaching resources and curriculum materials** for their comprehensives, accuracy, and usefulness for representing particular ideas and concepts. (INTASC 1)

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IV. Students and Their Differences

1. The successful teacher understands **how learning occurs**—how students construct knowledge, acquire skills, and develop habits of mind. (INTASC 2)
2. The successful teacher understands **how children learn and develop** cognitively, emotionally, socially, morally, and physically. (INTASC 2)
3. The successful teacher creates a classroom that accommodates a broad **range of learning style differences,** including identified special needs.
4. The successful teacher creates a classroom that respects **differences in culture and gender.**

V. Behavior of Individuals in Effective Organizations

1. The successful teacher builds **professional relationships for collaborative work with colleagues** to share teaching insights and to coordinate learning activities for students. (PRAXIS)
2. The successful teacher participates appropriately in school decision making processes and knows and appreciates the **uses of consensus decision making.**
3. The successful teacher understands and uses the **support and programs** available in the school.
4. The successful teacher appreciates the **relationships** between his or her personal teaching goals and those of the school as an organization.
5. The successful teacher understands and appreciates the **social norms and practices** of the school.
6. The successful teacher participates appropriately in **faculty and other school meetings**.
7. The successful teacher participates appropriately in **school and community activities.**

VI. Parent Involvement

1. The successful teacher is available to parents and guardians as necessary.
2. The successful teacher can communicate to parents that s/he, the teacher, really knows their child and has their best interest at heart.

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3. The successful teacher **communicates** effectively with parents or guardians about student learning. (PRAXIS)

4. The successful teacher can communicate to parents that s/he views the parents as important resources of information about the child as a learner and vital partners in managing the education of their children. Thus they can nurture effective family involvement in children's education at home. (NASDTEC)
5. The successful teacher can help make parents see school as a friendly place that can be a resource to them as well as to their children.

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